

REMARKS/ARGUMENTS

1. Amendment to the claim 1:

Claim 1 is currently amended according to Fig.4. The applicant believes that currently amended independent claim 1 better fully describes and uniquely points out the key features
5 of the claimed invention. As a result, applicant has narrowed the claim scope of currently amended independent claim1. No new matter is introduced by such amendment.

2. Rejection of claims 1-12:

Claims 1-12 are rejected under 35 U.S.C 103(a) as being unpatentable over U.S. Patent
10 No. 6,736,306 to Byun et al. Reasons of rejection are shown in page 3-7 of the above-mentioned Office action.

Response:

Examiner notes that Byun et al. discloses a semiconductor chip package having a similar
15 structure as the present application. However, applicant disagrees with Examiner's opinion and proposes reasons as follows.

According to col. 5 lines 14-18 in Byun's invention, two solder balls 162 are formed on the dummy pads 174 in Fig. 8b-8c. The connection terminal 162 is formed by allowing
20 spared parts of the solder balls 162 flowing to the spaces between the solder balls during a solder reflow process. The connection terminal 162 is formed over the second enhanced pad 170b (shown in Fig.7b) including the ball pad 124, the dummy pad 174 and the dummy pattern 172. And therefore, it is reasonable to assume that *Byun et al. has a dumbbells-shaped connection terminal 162* for prevention cracks in the semiconductor chip package.

25 However, the semiconductor package of the present invention has a plurality of bonding balls 36 and at least a dummy bonding bar 42 arranged in a single row between the second substrate and the PCB. It should be noted that the **dummy bonding bar 42 of the present**

invention has a rectangular shape (shown in Fig.7, and 10-12).

Since the bonding balls of Byun's invention are arranged in a rectangular array having at least two parallel rows. Beyond doubt, the inclining problem will not occur. Furthermore, Byun et al. never discloses a package having dummy bonding bar of a rectangular shape and being arranged with the bonding balls in the single row. Therefore, claim 1 should be patentable over Byun's invention.

The limitation of claim 2 is incorporate into amended claim 1. Therefore, claim 2 is cancelled and is no longer in need of consideration.

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Claims 3-12 are dependent upon claim 1. Therefore, claims 3-12 should be allowable if claim 1 is found allowable. Reconsideration of claims 1, and 3-12 is politely requested.

3. Introduction of claim 26-37:

15 Examiner points that the argument(s) relating to subject matter not included in the claim would not be considered having patent weight. Since the feature(s), which the package having only a single row of bonding balls and dummy bar is/are not recited in the claims, applicant rewrites the original claim 1 and includes the limitation of the single row of bonding balls and dummy bar as claim 26. No new matter is introduced.

20 As Byun's invention discloses, *the bonding balls and the connection terminals are arranged in an array having at least two parallel rows.* Beyond doubt, the inclining problem will not occur. Since the bonding balls in the prior art are spherical, the semiconductor package having a single row of the spherical bonding ball may have inkling problems. The present application has bonding balls and the dummy bar arranged in a single row, and **the**
25 **semiconductor package of the present application only has the single row between the substrates.** In addition, the dummy bar of the present invention has a rectangular shape and a third planer surface and so that the dummy bonding bar is capable of balancing the

semiconductor package. Therefore, the structure of the present is capable of preventing the latent inclining problem in a semiconductor package having only a single row of bonding ball in the prior art. As a result, claim 26 should be patentable over Byun's invention. Consideration of claim 26 is politely requested.

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Claims 27-37 are analogous with the original claim 2-12, supports for both of which can be found in paragraph [0020]-[0026] and Fig. 4-12.

As the new claims 27-37 are dependent upon claim 26, the new claims 27-37 should
10 be allowable if the new claim 26 is allowable. Consideration of the new claims 26-37 is therefore politely requested.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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Sincerely yours,



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25 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)